

Item C-8. IP Networks Executive Summary

a. Opportunities the proposed system seeks to address: IP Networks ("Applicant" and or "IPN") operates, among other things, a regional broadband network providing both wholesale and retail broadband access and transport services in the State of California. IPN is seeking to address the need for higher network reliability, network redundancy and affordable access to broadband connectivity and transport services in the markets that span between Redding, California and Eureka, California. IPN is planning to build a network that would simply connect the 11 underserved rural communities back to the major interconnect locations in Redding and Eureka. IPN and the proposed network would serve as a facilitator for existing service providers and entrants to service the last-mile connection. Thus, IPN's proposal qualifies predominantly as a middle-mile project.

The predominant connection for all of Eureka transits south out of Eureka. Due to the severity of the coastal weather conditions, this critical line has been severed several times in the past two years causing wide-spread outages for both wireline and wireless carriers as well as their underlying customers such as the hospitals, educational institutions and residents of the greater Eureka / Arcata area. The IPN Highway 299 project would provide essential diversity to the existing primary route and would facilitate broadband competition in the local market amongst the existing service providers while reducing one of the major barriers (the cost of IP Access) to entry for new service providers.

In addition to the benefits described above, the network would be used to provide PG&E sub-station monitoring capabilities and other energy management services along the proposed route in addition to delivering connectivity to the Humboldt Bay Power Station.

b. General description of the proposed funded service area: The Highway 299 traverses Shasta, Trinity and Humboldt Counties connecting the coastal communities of Eureka and Arcata to the I-5 corridor at Redding. During the period 1970 to 2000, the population of Trinity and Shasta Counties grew at roughly 10% while Humboldt grew at merely 2%. According to the 2000 Census Bureau, the respective populations of each county are; Trinity (14,317), Shasta (180,214) and Humboldt (129,000) with a combined total of 323,531 residents. Along the proposed middle-mile route there are 18 communities, and IPN intends to establish a point-of-presence in all 18.

The three counties combined cover 10,535 square miles with the largest portion of the network traversing Trinity County which has a population of 4.1 people per square mile. Shasta and Humboldt have higher population densities at 43.1 and 35.4 respectively. The mountainous and heavily wooded terrain has made building advanced fiber optic infrastructure to these communities uneconomical.

The proposed route would pass through the service territories of [REDACTED]. IPN views these service providers as potential anchor tenants on the network and will provide non-discriminatory interconnection and transport as outlined in IPN's interconnection guidelines.

c. Number of households and business passed: Upon completion, the proposed Project will pass over 7,705 rural households of which 1,502 are unserved today.

d. Number of community anchor institutions, public safety entities, and critical community organizations passed and/or involved with the proposed project: The proposed Project will involve critical connectivity for PG&E which will use the network for security and energy management purposes; healthcare providers similar to Trinity Hospital and Home Health Agency; children's educational institutions and higher education such as Trinity Alps Unified School District, where elementary schools such as Burnt Ranch don't have any broadband, Humboldt State University, College of the Redwoods; and a constellation of significant wholesale customers ranging from mobile wireless carriers to wireless internet service providers.

All of the foregoing entities are currently connected to the incumbents existing communications backbone, which, as a single "thread," lacks redundancy—making the entire existing network highly vulnerable to a system outage in the event of a cable break at a single location. The proposed Project will, upon completion, resolve this deficiency, ensuring that emergency responders and businesses alike can look forward to secure, uninterrupted services during moments of critical need and peak use.

e. Proposed services and applications for the proposed funded service areas and users: As a wholesale provider to other carriers and service providers, IP Networks' open-access service offerings will include (a) Ethernet-based point-to-point transport services, starting at symmetrical speeds of 1 Mbps and available up to 100 gigabit; (b) broadband IP access; and (c) virtual private networks. The proposed Project, upon completion, will easily accommodate such broadband applications as voice-grade services, video services, video conferencing, security services, data storage, web hosting, distance learning, telemedicine, and automated meter intelligence services.

f. Approach to addressing the non-discrimination and interconnection obligations: As further detailed in response to Application Item 22, Applicant agrees to (i) adhere to the principles contained in the FCC's August 5, 2005 Internet Policy Statement; (ii) not favor any lawful Internet applications and content over others; and (iii), in the event it's approved for a grant, require service providers purchasing Applicant's wholesale services to adhere to the same principles. As a public utility district in the state of Washington, Applicant is only authorized to provide services on a wholesale basis to Internet service providers and other carriers, resulting, by its very nature, in an open-access network.

g. Type of broadband system that will be deployed: The Applicant's proposed fiber-optic middle-mile backbone will consist of a minimum of 72-fiber strands to assure decades of available capacity. A portion of the fibers will be used for servicing local markets while the other fibers will be used for "express purposes" focusing on the mitigation of splice points and the elimination of routing devices "touched" to reduce latency factors. The transport layer of the network will use Cisco's multi-gigabit transport and switching fabric at each node that allows for "plug & play" Ethernet connections from the anchor institutions, strategic partners and other critically important customers on the network.

h. Qualifications of the applicant that demonstrate the ability to implement and operate a broadband infrastructure, and/or be a sustainable broadband service provider: Established in 2000, the Applicant has methodically advanced the services and service territory of the company without overburdening the enterprise with debt and unrealistic revenue expectations. Key customers on the network include [REDACTED] and PG&E whom

we've collaborated with on the development and expansion of middle-mile and last-mile fiber extensions.

The commercial business relationship with PG&E allows IPN to utilize all existing PG&E infrastructure (poles, conduits, fiber etc.) as a platform for deploying both middle-mile and last-mile broadband-based communications solutions. As with many of our combined projects, the connectivity from Eureka to Redding would not be feasible for PG&E if it were not for the wholesale and operating efforts of IPN. Much like the "Statutory Purpose" of the grant, PG&E has requirements for high bandwidth communications connectivity.

i. Overall infrastructure cost of the broadband system is \$22,085,000, which includes 211 middle miles in Phase 1, connecting to an existing middle-mile fiber backbone extension. On a unit cost basis, IPN will be delivering a middle mile fiber backbone connecting Eureka back to Cottonwood including electronics and completely "lit" with connectivity back to Sacramento (a competitively priced area) for less than \$105,000 per mile of fiber build (mileage used for this calculation is only the 211 miles from Cottonwood to Eureka and does not include the existing middle mile transport distance of 227 miles from Cottonwood back to Sacramento).

j. Overall expected subscriber projections for the project:

	2011	2012	2013	2014	2015
Household	616	1926	2697	3467	3853
Subscribers					

k. Number of jobs estimated to be created or saved as a result of this project:

Based on the "Simple Rule for Estimating Job-Years Created by Government Spending" at Table 5 of the White House web link for Estimates of Job Creation from ARRA, the Applicant estimates that spending the overall infrastructure cost of \$ 22,085,000 over two years will result in 47 jobs, with 25 considered direct and indirect jobs and 22 considered induced jobs.